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DeLorean Club of Oregon News & Information



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DeLorean Heritage

photo and info by David Bishop
(edited by Knut Grimsrud)

The pictured car is an Alpine-Renault A310 V6 from 1979. This car was one of several cars bought by Lotus Cars Ltd. during their DeLorean evaluation (the A310 uses the PRV V6 engine rear mounted). The car was originally silver with red leather interior, it was then (during its time at Lotus) painted black, possibly to reflect the John Player Special livery of Lotus's racing team.



Renault Alpine A310, an early influence over the DeLorean design.

The engine has electronic fuel injection - never fitted to A310's (they all used Solex carburetors), a lightened flywheel and competition clutch and is reported by the owner as very quick in such a light car (980kg).

There is some interesting information/history about the A310 and its relationship to the DeLorean. DMC abandoned the Citroen engine as their preferred engine (after abandoning a long series of other powerplants) in 1976. Apparently the Citroen engine only put out 102 HP and when Citroen learned of plans to turbocharge the engine in order to get the performance up to the standard of a grand touring car, they balked and suggested that DMC find another engine. The engine they subsequently adopted was the 2.85 liter PRV-6. As it turns out the A310 already has a reversed PRV-6 configuration although it was not a true mid-engined design (it's a rear engine design

with the transmission ahead of the engine). The difference in engine configuration required some re-engineering of the DMC chassis to accommodate the new engine configuration. The engine is essentially a front-wheel-drive drivetrain reversed, and this configuration also provided better interior room behind the seats in the DeLorean (where the "parcel shelf" in our cars is behind the seats). With the decision to use the PRV-6, DMC needed a way to help develop their edition of the engine and transaxle. The ideal vehicle was the Renault A310, which was of the identical configuration. DMC eventually owned four of the A310's as development cars and converted one of them to use an automatic transmission -- apparently a combination not built by Alpine.



Tech Notes

I've enjoyed making numerous repairs on my cars the last several months and in the next few issues I'll share some of the details of some common repairs. I actually enjoy working on my cars and take satisfaction in doing the repairs. In the last few months I've replaced the door handle with the new all metal unit that DMC is now remanufacturing (described in this issue), I've repainted my front fascia, I've replaced the steering rack on my daily driver (after 140,000 miles it was starting to get sloppy), and I raised a slight dent on a door. I still have a couple updates and repairs to make to prepare my cars for the summer show season, so there appears to be little chance of running out of projects. In this issue I've included some information about tires, tire sizes, and some tidbits about steering geometry. Also in this issue I've reviewed the new metal handle replacement from DMC with detailed installation procedures and illustrations. As always, the usual disclaimers* apply.

Where the Rubber Hits the Road

by Knut Grimsrud

Tires are one aspect of a vehicle that is often under appreciated and this applies to the DMC as well. There is little that contributes so substantially to the overall ride and feel of a car while being so neglected. When was the last time you checked your tire pressure? Do you even know what the appropriate tire pressure is? In the tradition of the DeCO tech notes, this article attempts to go into more depth on various tire aspects than you probably wanted to know.

The original tires for the DeLorean were Goodyear NCT's. Although these tires may have been good in their time, they are generally recognized today as a mediocre tire selection – plus they are generally unavailable as they are no longer produced. Unless you are showing your DeLorean in judged concours competition, there is little reason to seek out original tires for your car. The generally accepted substitute (and which from experience I can attest to is a good selection) is the Yokahama AVS Intermediate. The proper tire sizes are 235/60/VR15 on the rear and 195/60/VR14 on the front.

A lot of information is encoded into the tire size number and a couple words are probably worthwhile to explain how tire sizes are

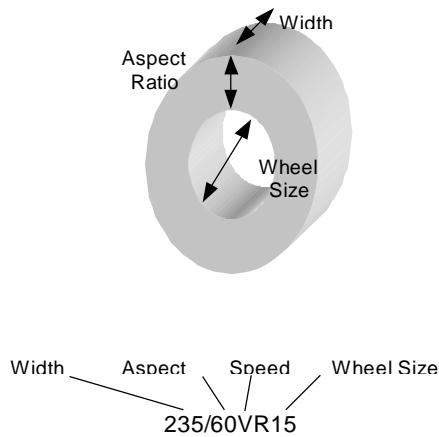
specified. The first number in the tire specification is the width of the tire (essentially how wide your tire track would be if you drove through the snow). The measure is in millimeters, and since there are 25.4 millimeters per inch, the width of the rear tires is 9 1/4 inches (235/25.4). Similarly, the width of the front tires is 7 2/3 inches.

The next number in the tire size specification (60 for both the front and the rear tires) is called the “aspect ratio” of the tire. The aspect ratio is a measure of the height of the tire’s sidewall measured as a percentage of the tire’s width. In our case, the tire sidewall is 60% as tall as the width of the tire. For the rear tires, the sidewall height is then about 5 1/2 inches (9 1/4 inches times 60%) and for the front tires it’s about 4 2/3 inches.

The first letter in the tire size designation is the speed rating for the tire. The table below indicates the maximum speed the tire is designed to handle for the various speed rating codes. For any driving that you or I are likely to do, the speed rating is not much of a consideration, but the rated tire for use on the car is the “V” rated tire which can accommodate the rated top speed of the car. The final letter merely indicates that it is a radial tire.

* Information shared in the DeCO newsletter is not a substitute for sound judgement on your part.

The final number in the tire size designation is the wheel size. This number is measured in inches and corresponds to the diameter of the wheel on which it is mounted. Obviously, the rear wheels are 15 inches in size and the front wheels are a smaller 14 inches.



Geometry 101

Although proper alignment is essential for good tire wear as well as vehicle handling, it is another one of those under-appreciated items. A little basic geometry can illustrate the abuse your tires take from even modest misalignment. For the purpose of illustration, let's say that your left front tire is misaligned with the other tires by one degree toe out. The front left tire has an overall diameter of:

$$14'' + 2 * 60\% * 195\text{mm} = 23.2''$$

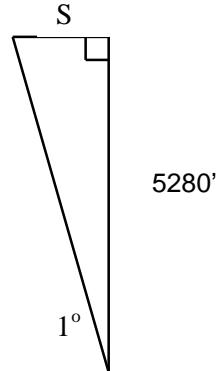
Since the wheel is mounted at its center, there's 11.6" of wheel/tire ahead of the pivot point, so a one degree toe out would correspond to the front end of the tire pointing to the left of centerline by approximately:

$$\tan 1^\circ = x/11.6''$$

or 0.2 inches to the left of the centerline.

With the length of the lever arm from the point the tie rod end connects to the steering knuckle, this corresponds to a misadjustment at the tierod end of just 0.08 inches (8 hundredths of inch).

A misalignment of just 1° wouldn't seem to have much impact. With just a 1° toe out, for every mile traveled, the tire effectively gets dragged sideways by:



$$\tan 1^\circ = S/5280'$$

$$S = 92'$$

Essentially, with such a one degree misalignment, the tire tracks off the line of travel and is pulled 92 feet perpendicular to the line of travel for every mile traveled. You can see how misalignment results in accelerated tire wear.

Changing Tire Size

I have seen DeLoreans with lower profile tires installed. This has several effects. Let's say that the front tires are replaced with 195/50VR14 tires instead of the proper 195/60VR14 tires.

The overall diameter of the proper 60-series tire is 23.2" as mentioned earlier. The overall diameter of the 50-series tire is:

$$14'' + 2 * 50\% * 195\text{mm} = 21.7''$$

The lower profile tire has an overall diameter that's 1.5" less than the original tire. The effect of this is that the front of the car will be lowered by 0.75" (the radius of the tire is half the diameter). However, even though the nose of the car will come down by $\frac{3}{4}$ ", the amount of space between the top of the tire and the wheel well of the car will also be increased by $\frac{3}{4}$ ". Appearance-wise, the nose of the car might come down slightly, but the noticeable space

above the tire that contributes to the raised appearance of the front would only be further exaggerated. If you are looking to lower the front end of the car, the best way is to get the lower springs that are now available, since this would reduce the space between the top of the tire and the wheel well.

The reduced diameter also has an effect on the speedometer reading. With the smaller tire, the tire rotates at a higher rate for a given velocity. The difference in circumference of the tires is proportional to the difference in speedometer readings. This difference is:

$$\pi * 23.2 / \pi * 21.7 = 1.07$$

The speedometer will read high by 7% (and the tire will rotate 7% faster for a given rate of travel than the standard tire size).

The proper sized tires are generally available and I would not recommend replacing them with the incorrect tire sizes since it potentially affects handling and does little to improve overall appearance.

Replacement Door Handle Installation

by Knut Grimsrud

Like most people, I take the plastic door handles on my cars for granted – when I pull on them, my doors open. However, a recent incident at a local DeLorean event caused me to take better note of the condition and durability of my door handles. I had a chance to meet up with my friends at the Pacific Northwest DeLorean club some months back, and it was during this event that the strangest coincidence occurred. A club member had not one, but both door handles break away in his hand. Although the situation may have seemed somewhat comical to the rest of us, I'm pretty certain that the car's owner did not see too much humor in it. Fortunately, in this case there was enough of the plastic handle tab remaining that a pair of needle-nosed pliers could be used to grab the end of the tab and pull

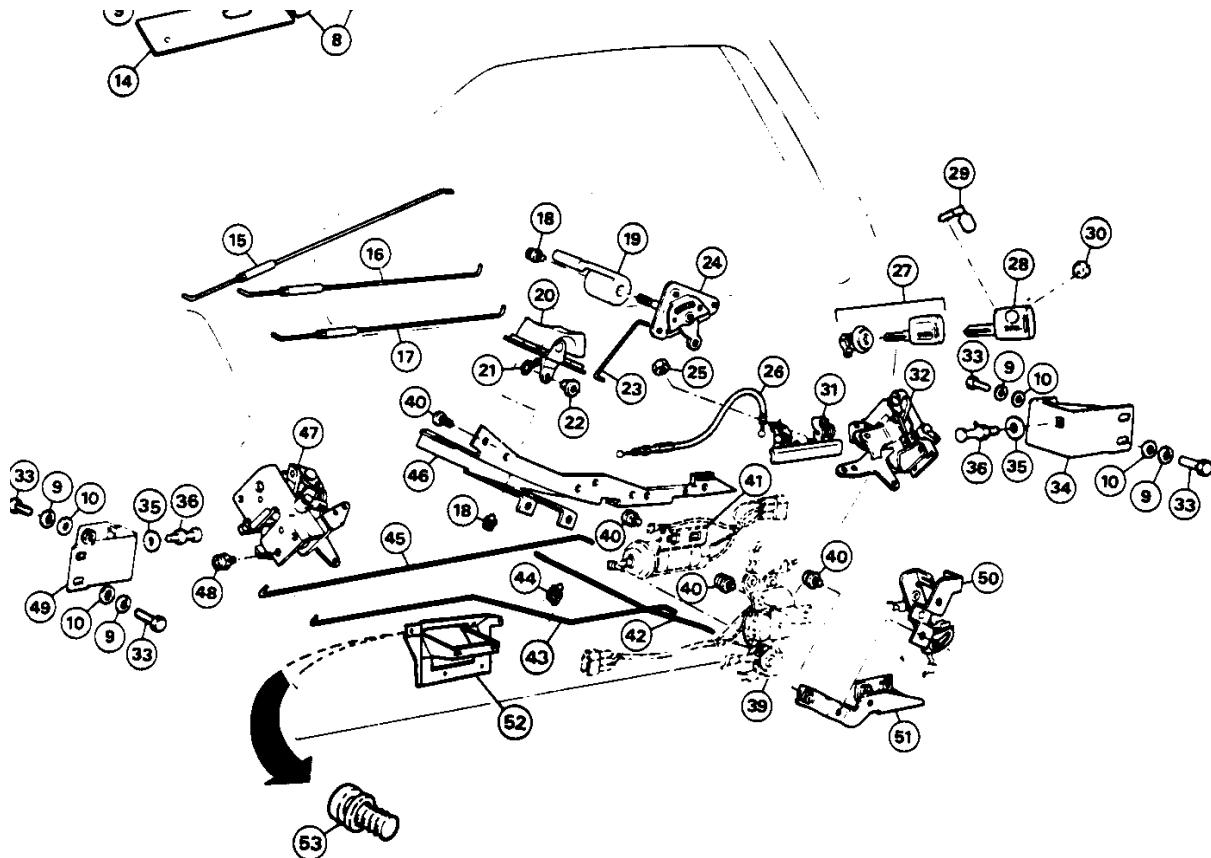
it sufficiently to unlatch the door (I believe the rest of the weekend the car window remained rolled down to allow the door to be reliably unlatched).

The plastic door handles on our cars are 20 years old now, and as often occurs with plastic, exposure to the elements and the sun's rays contribute toward the material becoming brittle. This is especially a problem in areas of the country with cold climates, as low temperatures compound this. Replacement metal door handles have been available for some time, but only recently DeLorean Motor Company has remanufactured the complete door handle assembly as part of their ongoing commitment to support the DeLorean marque. The earlier replacement door handle consisted of the handle only. The door handle assembly was not manufactured to be serviceable, so replacing only the handle required some tedious disassembly and re-assembly work on the handle assembly.

The new handle assembly from DMC is the complete assembly (corresponding to part number 31 in the parts diagram below). I was pleasantly surprised when I received a free sample of the assembly from DMC as part of their effort to work more closely with regional clubs and to better serve their customers. The supplied assembly is complete with the exception of the two nuts that secure the handle to the door (the nuts taken off when removing the original handle must be saved), and includes a durable cast metal handle.

Installation of the handle assembly is straightforward and could be undertaken by someone with moderate mechanical abilities and tools.

Before you start, clean and organize the workspace and collect the tools and materials together that you'll need for the procedure. I enjoy working on my cars and find satisfaction on completing quality repairs. I find that a clean and well-organized workspace contributes substantially to my tinkering enjoyment, and feel that it also contributes to productivity and



safety as well. A well-organized, clean, brightly-lit working environment is a must when working on your car.

The first step is to remove the upper interior door trim panel. This panel is attached to the door with "fir tree" plastic fasteners.

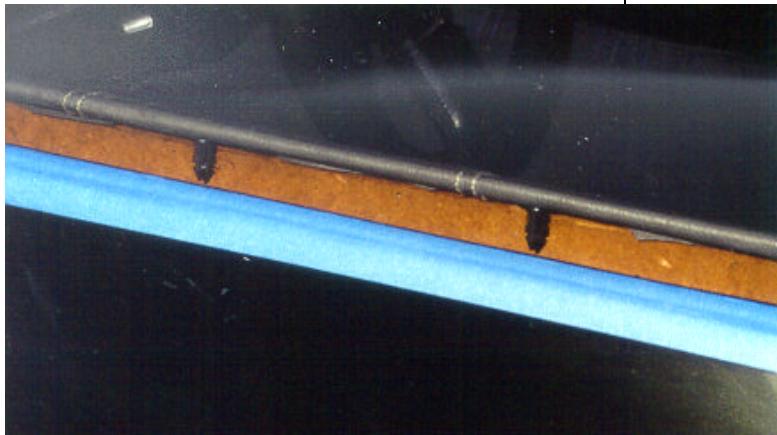
- Before you begin removal of the panel, in order to avoid any marring of the upper edge of the steel panel where it meets the window, run several layers of tape along the top edge as indicated in the photo below. Any tape with some thickness to it is fine (I used several layers of painters tape because I happened to have a roll handy, but electrical tape or duct tape is fine as well). The idea is to protect the stainless surface near the area you are working.

- To remove the trim panel, lower the window all the way in order to gain access to the top edge of the trim panel from outside the car.

- From outside the car, slip a broad screwdriver or other suitable instrument under the top edge of the trim panel and gently pry up in order to pull the panel and fir tree fasteners up. This works best when prying directly adjacent to each fastener. Instead of a



screwdriver, I used a stiff paint scraper to get the panel to initially lift because it was a little broader and a little thinner than my screwdrivers. Note that there are fasteners along the whole length of the top of the panel and you may need a long-handled screwdriver to pry up the front most and rearmost fasteners. Take special care to avoid marring or otherwise damaging the stainless steel along the underside of the window, so work carefully and avoid prying directly against it.



- Once loose, open the door and from the interior pull the panel upward to remove. The bottom of the panel has tabs that fit into corresponding slots in the door structure. When removing, it is helpful to notice the way in which the bottom tabs of the panel slides into the slots in the door.

The next step is to gain access to the back of the door handle assembly and remove the two retaining nuts that secure the handle assembly to the door.

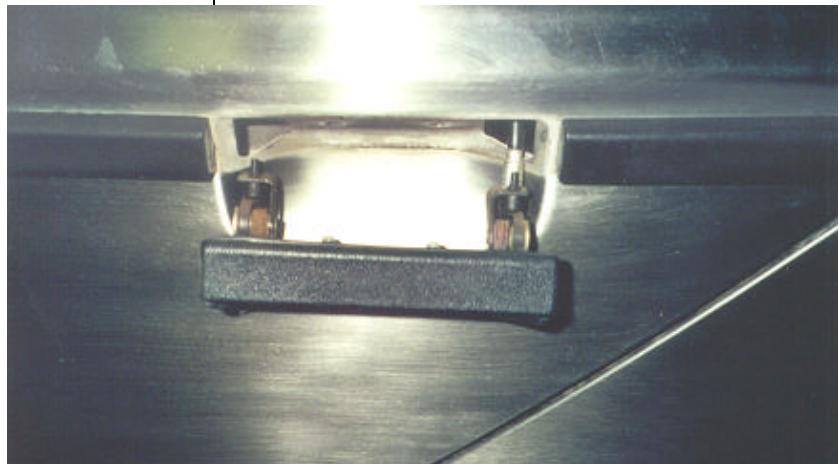
- Pull the plastic vapor barrier back from the rear portion of the door over the general area where the door handle is. The door handle is behind an oval cutout in the door and is readily accessible with a socket with a long extension.
- You'll be working through this access hole to remove and install the retaining nuts for the

door handle. Because the edges of the stainless steel can be extremely sharp, it is a good precaution to tape the steel edge around the access hole (I have learned this by experience when working in the door in the past). I find that electrical tape works very well for taping up the sharp edge with.

- With a socket and long extension, you can now remove the two retaining nuts holding the handle to the door through the oval access hole. Take special care to avoid dropping the nuts into the door after you remove them – I found the best technique was to remove the nuts with the door fully open. Removing the nuts up over my head ensured that they would stay in the socket when I got them off. The rearmost of the two nuts is close to a metal seam making it difficult to get the socket of the nut. I found that using a $\frac{1}{4}$ " drive socket rather than a $\frac{3}{8}$ " drive socket worked well since the $\frac{1}{4}$ " drive socket did not have a "hip" on it that prevented it from clearing the obstruction.

Once the two retaining nuts are removed, the door handle is loose. The next step is to remove the old door handle from the latch cable and install the new handle.

- From outside the car, gently pull the door handle assembly down and away from the depression in the door that it is seated in. At



this point you'll see the door latch cable attached to the handle. There is sufficient slack in the cable to allow you to pull the handle out enough to gain good access.

- Unhook the cable from the old handle assembly. I found that if I released the cable tension by lifting the interior door release handle that it was easier to get the cable unhooked from the handle. Hook the cable to the new handle assembly.

You're now ready to refasten the door handle and reassemble the door panel.

- Push the new handle assembly back into the seat in the door, aligning the two studs with the holes in the door panel.
- Screw the nuts securing the handle to the door back on. Reuse the nuts removed when the original handle was removed. Again, the nuts should be secured with the door in the full upright position in order to avoid the nuts falling out of the socket and getting lost inside the door.

The new handle is now installed and should be fully functional. Check for proper operation of the new door handle assembly by closing and opening your door a couple times. If everything is in order, install the upper door trim panel.

- Put the plastic vapor barrier back in place. The sticky goo used to hold it in place generally remains sticky, and I just had to push the edges of the plastic back into the sticky adhesive. If the adhesive has for some reason lost its tackiness, then you will need some sort of adhesive to secure the edges of the vapor barrier.

- Align the upper door trim panel taking care to ensure the tabs at the bottom of the panel align with the slits in the door itself. I found that the panel was a bit

of a tight fit behind the plastic bezel around the door latch. To ease the panel behind the bezel without risking breaking the now-brittle plastic, I used a broad spackle knife as a shoe horn. It is a bit tedious to get all the fir-trees simultaneously aligned with their corresponding holes in the door sill and also keep the tabs at the bottom of the panel in their slots, but a little patience and going back and forth between the various fasteners quickly yielded success.

- Seat the panel in its place by working it downward into the slots at the bottom of the panel and seating the fir-tree fasteners into their corresponding holes at the top of the door sill. I used my hand to gently beat the top of the panel in the area of each fir tree fastener in order to ensure each fastener was fully seated and to coax the entire panel all the way down and into position.

The total time for performing the handle replacement (including the time it took to take a couple photos and some notes for this writeup) was 30 minutes for me. I have had the upper interior door trim panel off several times before, so I was pretty experienced in removing and reinstalling the trim panel, but I would expect that most people that have moderate mechanical skills should be able to successfully perform the procedure.



Watch for these new reproduction components available soon from DeLorean Motor Company:

- Reproduction window/defrost switches (original size and style)
- On/Off switch for auxiliary items to replace the "dummy switches" on the console
- Rear screen (holds down t-panel) above rear window
- Reproduction fuel pump pickup screens and pickup hose
- Reproduction dashboards and binnacles (NOT caps or covers)
- Electronic angle drive replacement
- Fuel Tank Sending unit (finally, an alternative!)
- SS letters for rear bumper and door sills (available now)
- Tinted headlight and tail light covers (available now)
- Glove box inserts (available now)

DMC Corporate Cars

by Knut Grimsrud

Recent records uncovered from the DMC corporate archives include listings of the company car assignments. A large number of corporate DMC's were assigned and if you have an early '81 model DMC, you might find your car on the list. The following table includes the company car assignments plus information on a few cars damaged under shipping or repurchased by DMC.

Year	VIN #	Trans	Notes
1981	502	5 Speed	Engineering Car (Legend)
1981	515	Automatic	Engineering Car (D.O.T.)
1981	517	Automatic	Engineering Car (D.O.T.)
1981	520	Automatic	Company Car (N.Ellsworth)
1981	528	5 Speed	Engineering Car (Legend)
1981	530	5 Speed	Engineering Car (Legend)
1981	531	Automatic	Engineering Car (D.O.T.)
1981	532	5 Speed	Company Car
1981	537	Automatic	Engineering Car (D.O.T.)
1981	538	Automatic	Engineering Car (BKM Inc.)
1981	543	5 Speed	Engineering Car (G.M. Harrison Div.)
1981	548	5 Speed	Company Car
1981	549	Automatic	Engineering Car (Olson Eng.)
1981	550	Automatic	Company Car (T.Schnurr)
1981	558	5 Speed	Engineering Car (Legend)
1981	559	5 Speed	Company Car
1981	560	5 Speed	Company Car (M.McClung)
1981	561	5 Speed	Company Car
1981	562	5 Speed	Company Car (J.Charles)
1981	568	5 Speed	Company Car (E.Wrightsell)
1981	569	5 Speed	Company Car
1981	570	5 Speed	Company Car (F.Rzemek)
1981	573	5 Speed	Company Car (R.Patrick)
1981	575	5 Speed	Company Car (G.Wagenhauser)
1981	614	Automatic	Company Car (R.Wemple-CTC)
1981	615	Automatic	Company Car (V.Cipitario)
1981	627	5 Speed	Company Car (R.Bailey)
1981	628	5 Speed	Company Car
1981	643	Automatic	Company Car
1981	647	Automatic	Company Car
1981	654	Automatic	Company Car
1981	656	5 Speed	Company Car (D.Allen)
1981	657	5 Speed	Technical Study
1981	666	Automatic	Company Car (B.Byrd)
1981	668	Automatic	Company Car
1981	673	Automatic	Company Car (B.Jeshurin)
1981	676	5 Speed	Company Car (K.Pilotte)
1981	682	Automatic	Company Car (R.Schlotzauer)
1981	683	Automatic	Company Car
1981	685	Automatic	Company Car
1981	686	5 Speed	Company Car (E.Cafiero)
1981	688	Automatic	Company Car
1981	690	5 Speed	Company Car (G.Brown)
1981	692	5 Speed	Company Car
1981	694	5 Speed	Company Car

1981	696	5 Speed	Company Car
1981	697	Automatic	Company Car (P.Knoche)
1981	700	5 Speed	Engineering Car (Olson Eng.)
1981	701	Automatic	Company Car (D.Holness)
1981	703	Automatic	Company Car
1981	704	5 Speed	Company Car (R.Doran)
1981	706	5 Speed	Company Car
1981	708	5 Speed	Company Car (J.Synor)
1981	709	Automatic	Company Car (R.Lynch)
1981	712	5 Speed	Company Car
1981	723	Automatic	Company Car
1981	725	Automatic	Company Car
1981	728	5 Speed	Company Car
1981	729	Automatic	Company Car
1981	732	Automatic	Company Car
1981	733	Automatic	Company Car (J.Royce)
1981	736	5 Speed	Company Car
1981	737	5 Speed	Engineering Car (Olson Eng.)
1981	739	Automatic	Shipping Damaged
1981	747	5 Speed	Company Car (J.Wong)
1981	748	Automatic	Repurchase
1981	750	5 Speed	Company Car
1981	751	Automatic	Company Car
1981	757	Automatic	Company Car (M.Couteau)
1981	760	5 Speed	Company Car
1981	763	Automatic	Technical Study
1981	771	Automatic	Company Car
1981	772	5 Speed	Company Car (P.Petrow)
1981	774	5 Speed	Company Car (G.Busch)
1981	782	5 Speed	Company Car (J.Kos)
1981	783	Automatic	Company Car
1981	805	Automatic	Company Car
1981	808	5 Speed	Company Car
1981	816	5 Speed	Company Car
1981	858	5 Speed	Shipping Damaged
1981	861	5 Speed	Shipping Damaged
1981	864	5 Speed	Technical Study
1981	921	5 Speed	Repurchase
1981	930	5 Speed	Repurchase
1981	959	5 Speed	Repurchase
1981	1106	5 Speed	Company Car
1981	1322	5 Speed	Company Car (A.Lullove)
1981	1585	5 Speed	Engineering Car (Smokey Yunick)
1981	1759	5 Speed	Promotional
1981	2038	5 Speed	Company Car (H.Bushkin)
1981	2189	Automatic	Company Car (G.Laughlin)
1981	2687	5 Speed	Shipping Damaged
1981	2765	Automatic	Shipping Damaged
1981	2826	Automatic	Engineering Car (Olson Eng.)
1981	2970	Automatic	Engineering Car (Olson Eng.)
1981	2972	5 Speed	Shipping Damaged
1981	3242	5 Speed	Company Car
1981	3250	5 Speed	Company Car (E.King - Wood Gundy)
1981	3315	5 Speed	Company Car (M.Hay - Oppenheimer)
1981	3372	Automatic	Shipping Damaged
1981	3675	Automatic	Shipping Damaged
1981	3685	5 Speed	Shipping Damaged
1981	3716	5 Speed	Shipping Damaged
1981	4521	Automatic	Engineering Car (R.Walker Eng.)
1981	4523	5 Speed	Company Car (J.Carson)
1981	4558	5 Speed	Promotional
1981	5037	Automatic	Company Car (S.Davis, Jr.)
1981	5082	5 Speed	Promotional
1981	5195	5 Speed	Promotional (Photo - Natl. Adv.)
1981	5654	Automatic	Company Car (JZD)
1981	6074	Automatic	Engineering Car (KAP Test Labs)
1981	6083	5 Speed	Engineering Car (KAP Test Labs)
1981	6107	5 Speed	Company Car (JZD)
1981	6778	Automatic	Promotional (Photo - Natl. Adv.)
1981	6880	Automatic	Company Car (JZD)
1981	6882	Automatic	Company Car (JZD)

DeCO Events Calendar

July 4 Hillsboro 4th of July parade

The Hillsboro Rotary has invited the club to participate in the Hillsboro 4th of July parade. This is not only a fun chance to participate in a small-town parade, but provides a lot of exposure to the club as well. If you're interested, please contact me for details on parade lineup. Please RSVP to Knut ASAP so we can ensure we have sufficient parade allocation.

Aug 10-12 DMC Open House

DeLorean Motor Company is hosting an open house at its new facilities in Houston. The even includes a concours competition, technical seminars, warehouse tours, road rally, and other events. See www.usadmc.com for more information.

Sept West Coast DeLorean Show

The Northern California DeLorean Club is making preparations for a west coast DeLorean show to be held in northern California. Details are still sketchy so stay tuned to DMCNews for upcoming announcements.

In order to reduce the lead-time required for announcing various auto related events in the area that may be of interest to club members, notification will be made via the DMCNews service and direct e-mail. Please contact me with your latest e-mail address if you would like to receive notification of auto-related events in the area.

Message from your Coordinator

It's been a long time since my last newsletter, and you may be wondering about the status of the club.

Despite my not having sent out a newsletter in a while, the DeLorean Club of Oregon is alive and well. I've been spending some time online as one of the contributing moderators for the DMCNews newsgroup, as well as participating in local car-related events when convenient. In order to increase the number of local activities and spur further interest, I could use some help from fellow local DeLorean enthusiasts. If you would like to assist in organizing local DeLorean activities, please contact me.



SPECIALTY AUTOMOTIVE - now in our 15th year of providing quality NOS (and used) DeLorean parts as well as innovative new items such as steering column bushings, stainless steel speedo cables, aluminum bolt-on water pump pulleys, and remote door opening kits. See our new web page at www.delorean-parts.com or call us at 360-495-4640 (evenings and weekends are best).

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